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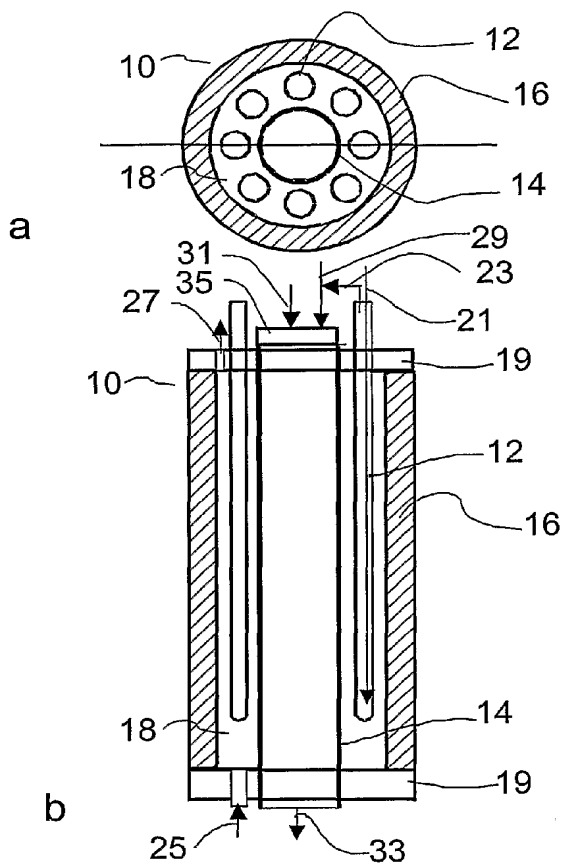
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(54) Title: HEATING SOLID OXIDE FUEL CELL STACK



(57) Abstract: This invention relates to a solid oxide fuel cell system comprising at least one tubular solid oxide fuel cell and a combustion heater mounted in sufficient thermal proximity to the fuel cell that heat generated from combustion inside the heater is able to heat the fuel cell(s) to a suitable operating temperature. The heater and fuel cell can be encased within a tubular thermal casing; the inside of the casing defines a first reactant chamber for containing a first reactant, such as oxidant. The fuel cell comprises a ceramic solid state electrolyte layer and inner and outer electrode layers concentrically arranged around and sandwiching the electrolyte layer. The outer electrode layer is fluidly communicable with the first reactant, and the inner electrode layer is fluidly isolated from the first reactant and fluidly communicable with a second reactant, such as fuel.

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